

Claims

1. A mobile station which transmits and receives packet data to and from a base station according to an assigned schedule such as a transmission timing which said base station determines
5 based on priority information on a priority of each packet data received from each mobile station, characterized in that said mobile station comprises:

a transmission data storage unit for temporarily storing at least one or more packet data inputted thereto;

10 a priority control unit for generating priority information which said base station uses for determination of said schedule in advance based on a priority of at least the one or more packet data stored in said transmission data storage unit; and

15 a transmitting unit for transmitting the priority information generated by said priority control unit to said base station.

2. The mobile station according to Claim 1, characterized in that when at least the one or more packet data are stored in
20 said transmission data storage unit, and packet data is further inputted into said transmission data storage unit and an amount of packet data stored in said transmission data storage unit exceeds an amount of data which can be transmitted, via one transmission, to said base station in a predetermined format
25 which is defined in advance between said base station and said mobile station, said priority control unit generates the priority information in advance based on a priority of at least one or more packet data included in a remainder of the one or more packet data stored in said transmission data storage unit
30 and the packet data further inputted in said transmission data

storage unit, other than packet data which are to be transmitted to said base station, a predetermined number of times.

3. The mobile station according to Claim 1, characterized in that the priority information is a maximum priority of at least
5 the one or more packet data.

4. The mobile station according to Claim 1, characterized in that the priority information is an average of a priority of at least the one or more packet data stored in said transmission data storage unit.

10 5. The mobile station according to Claim 1, characterized in that the priority information is a priority of at least the one or more packet data stored in said transmission data storage unit and calculated using an amount of each data.

6. The mobile station according to Claim 1, characterized in
15 that said transmitting unit transmits the priority information generated by the priority control unit to the base station by superimposing it onto a channel for a transmission request which said transmitting unit transmits to said base station before transmitting packet data.

20 7. The mobile station according to Claim 1, characterized in that said transmitting unit transmits the priority information generated by the priority control unit to the base station by superimposing it onto a channel for data transmission via which said transmitting unit transmits packet data to said base
25 station.

8. The mobile station according to Claim 1, characterized in that said transmitting unit transmits the priority information generated by the priority control unit to the base station by superimposing it onto a channel for transmission of modulation
30 type information via which said transmitting unit transmits

modulation type information, as well as packet data, to said base station.

9. The mobile station according to Claim 1, characterized in that the transmission of packet data is carried out on time-division basis, and the transmitting unit sends out priority information generated by the priority control unit for each of plural packet data into which said packet data is time-divided onto a channel for transmission request which it transmits to the base station before transmitting each of said plural packet data to the base station.

10. The mobile station according to Claim 1, characterized in that the priority control unit has two or more operation modes for setting of the priority information, the mobile station and the base station transmit and receive a signal for switching between the two or more operation modes for said priority information to and from each other, and, when receiving the signal for switching between the two or more operation modes for said priority information from said base station, the priority control unit switches between the two or more operation modes for the setting of the priority information, and generates the priority information which said base station uses for the determination of said schedule in advance according to one of the two or more operation modes to which another one of them has been switched, based on the priority of at least the one or more packet data stored in the communications data storage unit.

11. The mobile station according to Claim 1, characterized in that the transmission data storage unit is provided with two or more memories, performs time division on at least the one or more packet data inputted thereto one by one to generate

plural packet data, temporarily stores the plural packet data in said two or more memories, respectively, and outputs priorities of the plural packet data into which each of the one or more data is time-divided to the priority control unit one
5 by one, the priority control unit generates the priority information which said base station uses for the determination of said schedule in advance based on the priorities of the plural packet data which are stored in said two or more memories, respectively, and into which each of the one or more data is
10 time-divided, and the transmitting unit transmits the priority information which the priority control unit generates to said base station for each of the plural packet data into which each of the one or more data is time-divided.

12. The mobile station according to Claim 10, characterized in
15 that the priority control unit can receive from the base station a result of determination of whether to have received packet data correctly for each of plural packet data into which each of the one or more data is time-divided, and the priority control unit generates the priority information which said base station
20 uses for the determination of the schedule in advance based on a highest priority among priorities of plural packet data which are stored in two or more memories for a first time and into which each of the one or more data is time-divided until receiving information indicating that the above-mentioned
25 judgment result means that the base station received each of the plural packet data correctly.

13. A communications system characterized in comprising:
a mobile station including a transmission data storage unit for temporarily storing at least one or more packet data
30 inputted thereto, a priority control unit for generating

priority information which said base station uses for determination of said schedule in advance based on a priority of at least the one or more packet data stored in said transmission data storage unit, and a transmitting unit for
5 transmitting the priority information generated by said priority control unit to said base station; and

said base station including a transmission scheduler for determining a schedule for assigning a transmission timing which it determines based on the priority information on the
10 priority of packet data which it is to receive from said mobile station, and a transmitting unit for notifying the schedule for assigning the transmission timing determined by said transmission scheduler to said mobile station,

and characterized in that said base station and said
15 mobile station transmit and receive packet data to and from each other according to the schedule for assigning the transmission timing determined said base station.

14. A communications control method characterized in comprising the steps of:

20 temporarily storing at least one or more inputted packet data in a transmission data storage unit of a mobile station;

generating priority information which said base station uses for determination of said schedule in advance based on a priority of at least the one or more packet data stored in said
25 transmission data storage unit;

transmitting the priority information from said mobile station to said base station; determining a schedule for assigning a transmission timing which is determined based on the priority information on the priority of packet data which
30 said base station is to receive from said mobile station using

a transmission scheduler of said base station; and

notifying the schedule for assigning the transmission timing determined by said transmission scheduler to said mobile station, and characterized in that said base station and said
5 mobile station transmit and receive packet data to and from each other according to the schedule for assigning the transmission timing determined said base station.